Controlled Hydrogen Fleet and Infrastructure Demonstration and Validation Project

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IPHE Steering Committee Meeting

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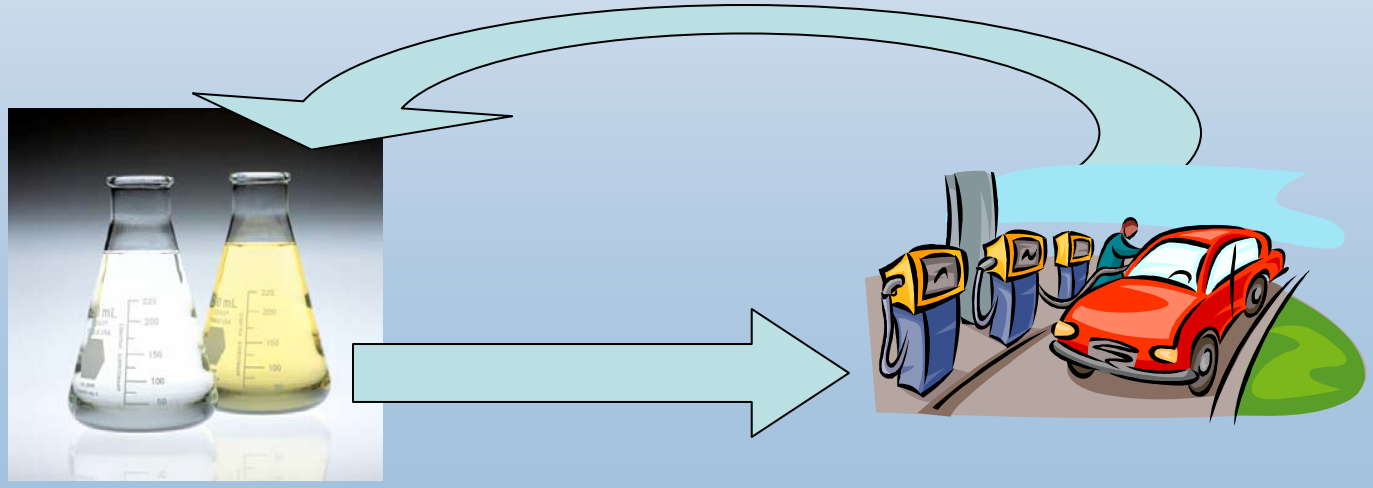
Technology Validation Strategy

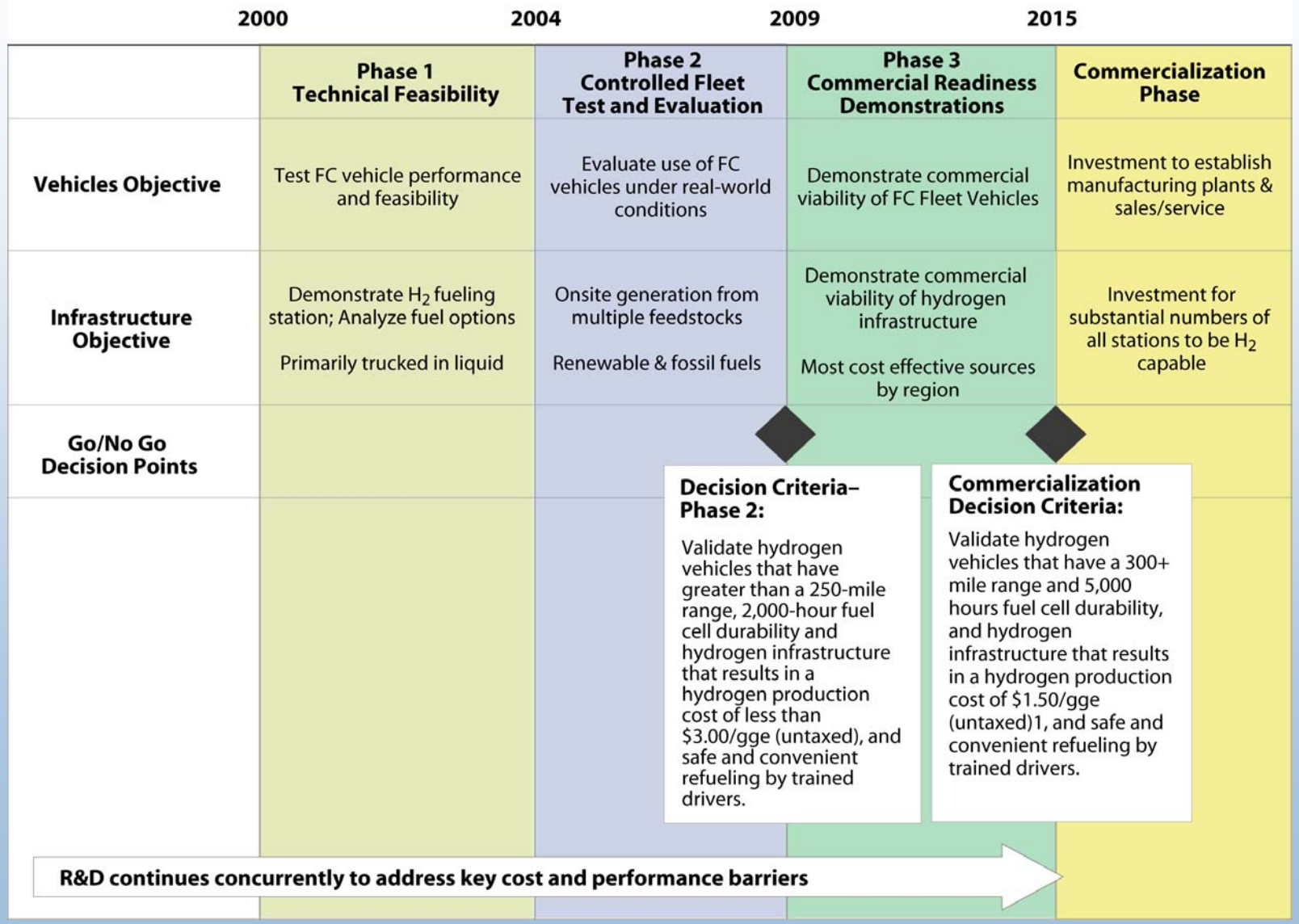
- Conduct learning demonstration of hydrogen infrastructure in parallel with demonstration of direct hydrogen fuel cell vehicles to allow a **commercialization decision** by 2015
- Test, demonstrate, and validate **complete** systems solutions
- **Refocus** Hydrogen Program R&D



Research & Development

Technology Validation through "Learning Demonstrations"

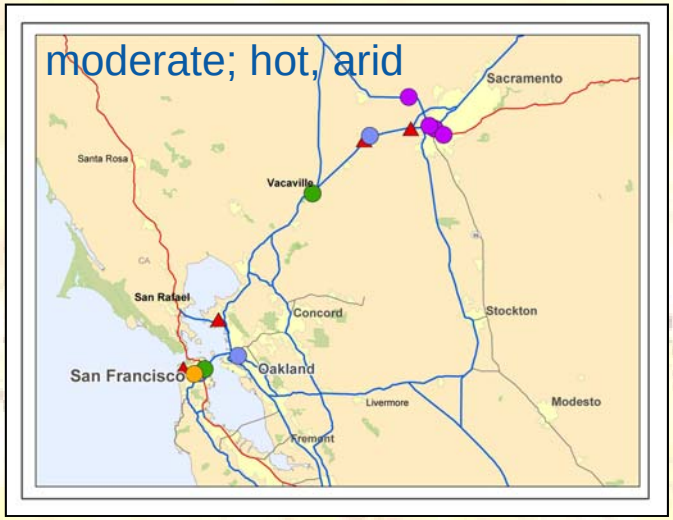
Transportation and Infrastructure Timeline



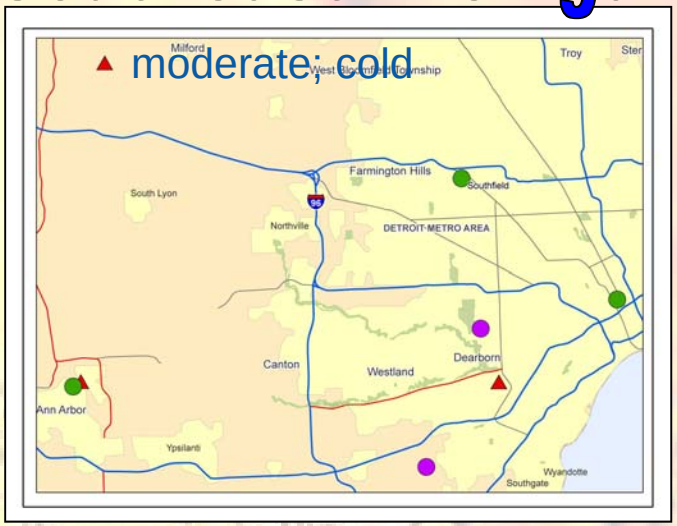
Solicitation Issued and Successful Teams Announced

Testing under different climatic conditions

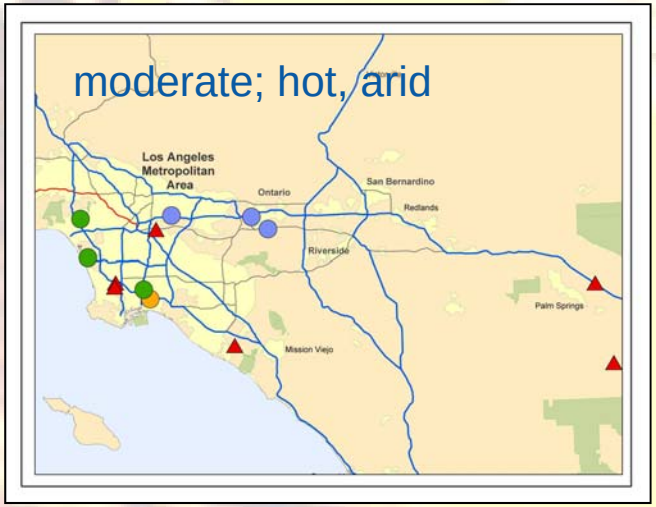
Northern California

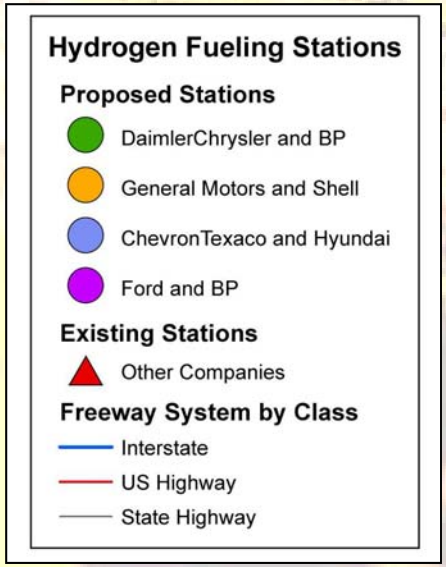


Southeast Michigan



Southern California





Mid-Atlantic

Detailed Vehicle Data Collected

- Operations
  - Fuel economy
  - Range
  - Vehicle refueling time
- Vehicle Fuel Cell Systems and Components
  - Durability
  - Efficiency
  - H_2 tank cycle life
- Performance
  - Top speed, Acceleration
  - Gradeability
  - Minimum/maximum temperature
  - Cold drive-away
  - Emissions
- Safety
  - Unplanned failures
  - Fuel tank release
  - Grounding, sensor, and passenger compartment alarm

Infrastructure Data Collected

- Infrastructure Performance Measures
  - Site
    - Purity of hydrogen from storage tank
  - Fueling System
    - Durability
    - Hydrogen production and delivery, refueling rate
  - Safety
    - Release of hydrogen from fueling connector

- Fuel cell co-generation facility (Optional)
    - Cost of co-generation
    - Fuel cell durability
    - Electrical efficiency of fuel cell
  - Safety
    - Electrical overload
    - Ground short
    - Alarms

Potential IPHE Project: Harmonize Data Protocols

- The US Learning Demonstration:
  - ➢Performance measures established
  - ➢Data validates technology readiness
  - ➢Data focuses research program

- Potential IPHE project: harmonize global demonstration test protocols to be able to achieve the above objectives